ZORN INSTRUMENTS

WLAN

GPS | GNSS
optional

ZORN Mini 3.1

Light Weight Deflectometer (LWD)

following ASTM E2835-11 and TP BF-StB Part B 8.3
calibrated according to TP BF-StB Part B 8.4

Details

- Drop weight
  5 kg (weight)
- Load device
  940 mm, 9,4 kg
  (height, total weight)
- Base plate oval
  190 mm, 110 mm, 6,9 kg
  (width, depth, weight)
- Electronics box
  120 mm, 90 mm, 0,5 kg
  (Width, height, weight)

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Safe compaction control for narrow cable trenches

Trenches for broadband fiber-optic cable are often narrower and shallower than those for conventional pipes and cables. Nevertheless, compaction quality should be checked before installing cable and during backfill. Standard Light Weight Deflectometers (300 mm plate, 10 kg drop weight) are too large and thus unsuitable for the task.

The ZORN MINI is a Light Weight Deflectometer model, specifically developed for this application. Based on the familiar LWD design according to test specification TP BF-StB, Part B 8.3, users can reliably test soil compaction inside narrow trenches, starting at a width of 120 mm.

2 A small device for a large task.

This ZORN MINI 3.1 is especially suitable for the safe quality testing of both bedding layers and backfill in so-called mini trenches that are significantly narrower and shallower compared with conventional cable trenches.

This specialized Light Weight Deflectometer can be used for testing on the trench base and on compacted refill just as comfortably as with a ZORN ZFG 3.1 or ZFG 3.000 in standard trenches.

3 Adapted skills for new challenges

The base plate of the ZORN MINI 3.1 has an oval shape to match the geometry of mini trenches e.g., for fiberoptic cable that can be as narrow as 110 mm. The maximum ground pressure under the load plate of the ZORN MINI 3.1 is 0.2 MPa (MN/m2), corresponding to a standard 150 mm round plate.

The load plate can be coupled to the loading device via a bayonet transport lock. This makes it easy for the operator to lift the ZORN MINI in and out of a trench.

Even though mini cable trenches are not as deep as frost-save standard trenches, backfill material is still laid and compacted in layers. With 150 to 200 mm, thicknesses of these layers is smaller than with conventional excavations. As a result, the ZORN MINI 3.1 is equipped with a reduced drop weight of 5 kg. The impact force generated by this weight is 3.535 kN, which has proven to be an optimum for testing such thin layers.

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